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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,439	11/16/2001	In Hwan Choi	2080-3-52	3995

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EXAMINER

AGHDAM, FRESHTEH N

ART UNIT

PAPER NUMBER

2631

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/991,439	CHOI ET AL.	
	Examiner	Art Unit	
	Freshteh N. Aghdam	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following informalities:

As to claim 1, in the decoding part, the expression "data interleaving" should be replaced by the expression "data de-interleaving" to be consistent with figure 11, block 66B and the disclosure.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 10-18 are rejected under 35 U.S.C. 112, second paragraph, for being vague and indefinite because the transitional phrase in lines 2 and 3 refer to a "said receiving system comprising" where as the claim's body is reciting the limitations of a transmitting system. Furthermore, in claim 10, line 1; "receiving system" must be changed to "transmitting system".

Claim Objections

Assuming the rejection of claims 10-18 is overcome by changing "said receiving system" to "said transmitting system", the claims 10-18 are the same as claims 1-9 and

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therefore are duplicate claims, which applicant is required to cancel either claims 1-9 or 10-18.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knutson et al (US Patent 6,788,710), further in view of Fimoff (US Pub. 2004/0207757) and the admitted prior art.

As to claims 1 and 10, Knutson et al teach a VSB transmission system comprising a supplemental data processor that includes a supplemental data (Fig. 6; Col. 5, Lines 15; Lines 25-27; Lines 31-33), encoding (Cyclic Redundancy Check), inserting an auxiliary packet, inserting a null packet, and inserting an MPEG header and the multiplexer 44 that multiplexes the supplemental data and the MPEG data (Fig. 4; Col. 4, Lines 46-50). One of ordinary skill in the art would clearly recognize that encoding methods are well known in the art and chosen with respect to reducing different types of errors in a system. Furthermore, Knutson teaches multiplexing supplemental data (i.e. auxiliary packet) with a predefined data (i.e. data stream 30) in multiplexer 44 see figure 4. Knutson is silent about the details of the first and second encoders as recited in claim

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1. Fimoff, in the same field of endeavor, teaches a VSB transmission system that further comprises a Reed Solomon encoder 82 that adds RS parity bit to the data and being connected to an interleaver 84 and an outer coder (Fig. 7, 86; Fig. 11, 174-178) that could be a convolutional encoder with a $\frac{1}{4}$ or $\frac{1}{2}$ rate (Fig. 7; Pg. 3, Par. 45; Fig. 11) wherein the outer coder 86 is coupled to the de-interleaver 98 and furthermore wherein a parity added by the RS encoder is removed (Fig. 7, 100; Pg. 3, Par. 48 and 49) and coupled to an ATSC-VSB transmitter 104. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Fimoff with Knutson in order to enhance error reduction performance in communication systems. Although, Fimoff is silent about using a trellis encoder and adding a second parity in his ATSC transmitter, applicant admits that the VSB transmitter is well known in the art (Fig. 1; Pg. 17, Par. 44) and comprises of an RS encoder 2 that adds a parity to the data, a data interleaver 3, a trellis encoder 4, a pilot inserter 6, a VSB modulator 7, and transmission of data to a receiver. One of ordinary skill in the art would clearly recognize that it is well known in the art for an RS encoder to randomize the data, using a byte-symbol converter to convert the data bytes to symbols before inputting them to the convolutional coder, and performing the symbol-byte conversion prior to de-interleaving the data. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Fimoff and the admitted prior art in order to transmit the data in accordance with the MPEG established standards.

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Claims 2, 4, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knutson et al, Fimoff, and the admitted prior art, further in view of Ikeda et al (US Patent 6,118,825).

As to claim 2, 4, 11, and 13, Knutson et al, Fimoff, and the admitted prior art teach all the subject matters claimed above, except for a control signal to control the supplemental data symbol processor in such a way that the second control signal is generated based on the first control signal wherein the first control signal indicates whether the input signal is a supplemental data symbol and the second control signal is provided to the supplemental data processor. Ikeda et al, in the same field of endeavor, teach the controller 12 that controls the multiplexing circuit 9 wherein the multiplexing circuit 9 selects either HQ, LQ, synchronization, or TMCC signal and changes the coding rate by puncturing processing (Fig. 3; Col. 6, Lines 31-40; Col. 12, Lines 15-19). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Knutson et al, Fimoff, and the admitted prior art with Ikeda et al in order to vary the rate of the convolutional coding.

Allowable Subject Matter

Claims 3, 5-9, 12, and 14-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dong et al (US Patent 6,549,542), Abe et al (US Pub. 2004/0097215), and Hatta (US Patent 6,618,450).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freshteh N. Aghdam whose telephone number is (571) 272-6037. The examiner can normally be reached on Monday through Friday 9:00-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Freshteh Aghdam

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January 16, 2005


MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER